

AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1-7. (Canceled)

8. (Currently Amended) A rolling bearing unit comprising:

an outer ring;

an inner shaft disposed radially inward of said outer ring, said inner shaft including an outer peripheral surface and a first axial end surface,

said inner shaft including an inner ring fitting part disposed on said outer peripheral surface adjacent to said first axial end surface; and

an inner ring connecting to said inner ring fitting part, said inner ring including first and second axial end surfaces,

said first end surface of said inner shaft end being crimped onto said first axial end surface of said inner ring,

wherein:

said inner ring includes a shoulder, said shoulder including an outer peripheral surface, said outer peripheral surface including an outer diameter;

said inner ring includes an annular step portion disposed axially between said shoulder and first axial end surface of said inner ring;

said step portion includes a cylindrical surface, said cylindrical surface

including an axial outer diameter, said outer diameter of said cylindrical surface being smaller than said outer diameter of the shoulder portion; and

said step portion includes an inclined surface, said inclined surface connecting said cylindrical surface to said shoulder, said inclined surface including a diameter, and said diameter of said inclined surface expanding towards said second axial end surface of said inner ring and towards said shoulder,

whereupon said first axial end surface of said inner shaft being crimped onto said first axial end surface of said inner ring and an annular binding jig configured to resist movement of said inner ring during said crimping being matingly engageable against the entirety of said inclined surface, said inclined surface opposes along the entirety thereof a force of said binding jig that is disposed on said inclined surface and which vertically presses against said inclined surface whereby said binding jig force and a force of said crimping extending radially outward relative to said inner ring and said inner shaft each act in opposite directions so as to offset one other so that said inner ring is substantially prevented from moving relative to said binding jig, each portion of the cylindrical surface and the shoulder providing respective seating surfaces on which the binding jig is seatable so as to resist movement of the inner ring;

and further comprising:

a pulsar ring attached and fitted on the inner ring shoulder portion's outer peripheral surface; and

a cover attached and fitted to an end portion of the outer ring, wherein the cover comprises an annular portion, a cylindrical portion and a connecting portion connecting the annular portion and the cylindrical portion, the annular portion provided adjacent to a detection surface of the pulsar ring and extending between a radially outward direction and a radially inward direction, the cylindrical portion formed along an axial direction, the connecting portion disposed in proximity to the inner ring step portion's inclined surface, and wherein the cylindrical portion has an inner diameter smaller than the diameter of the inner ring shoulder portion's outer peripheral surface and the cylindrical portion has an outer diameter larger than the diameter of the inner ring step portion's cylindrical surface.

9. (Previously Presented) The rolling bearing unit of claim 8, wherein an inclination angle is defined by an angle between said inclined surface and said cylindrical surface, and said inclination angle being from 90 degrees to 175 degrees.

10. (Currently Amended) A rolling bearing unit comprising:
an outer ring;
an inner shaft disposed radially inward of said outer ring, said inner shaft including an outer peripheral surface and a first axial end surface; and
two axial inner rings adjacently disposed on said outer peripheral surface of said inner shaft, each of the rings including first and second axial end surfaces,
wherein:

said first axial end surface of said inner shaft is crimped onto said first axial end surface of one of said two axial inner rings;

said one inner ring onto which said inner shaft is crimped includes a shoulder portion, said shoulder portion including an outer peripheral surface, said outer peripheral surface including an outer diameter;

said one inner ring onto which said inner shaft is crimped includes a circular annular step portion disposed axially between said shoulder portion and said first axial end surface of said inner ring;

said step portion includes a cylindrical surface, said cylindrical surface including an axial outer diameter, said outer diameter of said cylindrical surface being small than said outer diameter of said shoulder portion; and

said step portion includes an annular inclined surface connecting said cylindrical surface to said outer peripheral surface of said shoulder portion, said inclined surface including a diameter, and said diameter of said inclined surface expanding towards said second axial end surface of said inner ring and towards said shoulder portion,

whereupon said first axial end surface of said inner shaft being crimped onto said first axial end surface of said inner ring onto which said inner shaft is crimped and an annular binding jig configured to resist movement of said inner ring onto which said inner shaft is crimped during said crimping being matingly engageable against the entirety of said inclined surface, said inclined surface opposes along the entirety thereof a force of said binding jig that is disposed on said inclined

surface and which vertically presses against said inclined surface whereby said binding jig force and a force of said crimping extending radially outward relative to said inner ring onto which said inner shaft is crimped and said inner shaft each act in opposite directions so as to offset one other so that said inner ring onto which said inner shaft is crimped is substantially prevented from moving relative to said binding jig, each portion of the cylindrical surface and the shoulder portion providing respective seating surfaces on which the binding jig is seatable so as to resist movement of the inner ring onto which said inner shaft is crimped;

and further comprising:

a pulsar ring attached and fitted on said one inner ring shoulder portion's outer peripheral surface; and

a cover attached and fitted to an end portion of the outer ring, wherein the cover comprises an annular portion, a cylindrical portion and a connecting portion connecting the annular portion and the cylindrical portion, the annular portion provided adjacent to a detection surface of the pulsar ring and extending between a radially outward direction and a radially inward direction, the cylindrical portion formed along an axial direction, the connecting portion disposed in proximity to said one inner ring step portion's inclined surface, and wherein the cylindrical portion has an inner diameter smaller than the diameter of said one inner ring shoulder portion's outer peripheral surface and the cylindrical portion has an outer diameter larger than the diameter of said one inner ring step portion's cylindrical surface.

11-12. (Canceled)

13. (New) A rolling bearing unit comprising:

an outer ring;

an inner shaft disposed radially inward of the outer ring and having an inner ring fitting part on an outer peripheral surface of one axial direction side of the inner shaft;

an inner ring fitted on the inner ring fitted part, wherein an end of the inner shaft at said one axial side is crimped securing the inner ring, wherein the inner ring has a shoulder portion and an annular step portion at said one axial direction side of the inner shaft, the shoulder portion having a cylindrical surface formed along the axial direction, the step portion having a cylindrical surface formed along the axial direction and being at a smaller outer diameter of the inner ring than the cylindrical surface of the shoulder portion, the inner ring having an inclined surface that connects the cylindrical surface of the shoulder and the cylindrical surface of the step portion, a diameter of the inclined surface gradually decreasing toward said one axial direction side of the inner shaft;

a pulsar ring attached and fitted on the inner ring shoulder portion's cylindrical surface;

a cover attached and fitted to an end portion of the outer ring at said one axial direction side of the inner shaft, wherein the cover comprises an annular portion, a cylindrical portion and a connecting portion connecting the annular portion and the

cylindrical portion, the annular portion provided adjacent to a detection surface of the pulsar ring and extending between a radially outward direction and a radially inward direction, the cylindrical portion formed along the axial direction, the connecting portion disposed in proximity to the inclined surface of the inner ring, and wherein the cylindrical portion has an inner diameter smaller than the diameter of the inner ring shoulder portion's cylindrical surface and the cylindrical portion has an outer diameter larger than the diameter of the inner ring step portion's cylindrical surface.

14. (New) The rolling bearing unit of claim 13, wherein inclination angle of said inclined surface is more than 90 degrees and less than 175 degrees relative to the shoulder's cylindrical surface.